

Appl. No. 10/817,195
Amdt. dated January 22, 2006
Reply to Office Action of October 24, 2006

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1. (Currently Amended) An optocoupler package comprising:

- (a) a substrate comprising a leadframe and a molding compound;
- (b) an optical emitter;
- (c) an optical receiver, wherein the optical emitter and the optical receiver are

electrically coupled to the leadframe; and

(d) an optically transmissive medium disposed between the optical emitter and optical receiver, and wherein the optocoupler package further comprises a plurality of conductive structures coupled to the leadframe, wherein the conductive structures have heights greater than the heights of the optical receiver and the optical emitter, and wherein the conductive structures are solder structures.

Claims 2.-3. (Canceled).

Claim 4. (Original) The optocoupler package of claim 1 further comprising bond wires electrically coupling the optical receiver to the leadframe and electrically coupling the optical emitter to the leadframe.

Claim 5. (Currently Amended) The optocoupler package of claim 1 wherein the leadframe includes [[a]] etched portions and non-etched portions, and wherein the etched portions are covered by the molding compound and the non-etched portions are not covered by the molding compound.

Claim 6. (Original) The optocoupler package of claim 1 wherein the leadframe comprises copper.

Appl. No. 10/817,195
Amdt. dated January 22, 2006
Reply to Office Action of October 24, 2006

PATENT

Claim 7. (Original) The optocoupler package of claim 1 wherein a plurality of optocouplers are on the substrate.

Claim 8. (Currently Amended) The optocoupler package of claim 1 wherein the leadframe includes [[a]] etched portions and non-etched portions at a first side, and wherein the etched portions are covered by the molding compound and the non-etched portions are not covered by the molding compound, and wherein the molding compound completely covers the second side of the leadframe.

Claim 9. (Original) A method for forming an optocoupler package comprising:

- (a) forming a substrate comprising a leadframe and a molding compound;
- (b) attaching an optical emitter and an optical receiver to the substrate; and
- (c) depositing a light transmissive material between the optical emitter and the optical receiver.

Claim 10. (Original) The method of claim 9 further comprising:
forming a plurality of conductive structures on the substrate, wherein the conductive structures have heights greater than the heights of the optical emitter and optical receiver.

Claim 11. (Original) The method of claim 9 wherein the method comprises, prior to (a), etching the leadframe.

Claim 12. (Original) The method of claim 9 wherein the leadframe comprises copper.

Claim 13. (Original) The method of claim 9 further comprising attaching wires from the optical emitter and the optical receiver to the leadframe.

Claim 14. (Original) The method of claim 9 further comprising depositing an opaque material on the light transmissive material.

Appl. No. 10/817,195
Amdt. dated January 22, 2006
Reply to Office Action of October 24, 2006

PATENT

Claim 15. (Original) The method of claim 9 further comprising attaching at least four optical emitters and at least four optical receivers on the substrate.

Claim 16. (Currently Amended) An optocoupler package comprising:

- (a) a substrate; and
- (b) at least two optical emitters;
- (c) at least two optical receivers;
- (d) optically transmissive media between adjacent optical emitters and optical receivers; and
- (e) a light reflective material on the optically transmissive media, wherein the optical emitters and the optical receivers are on the substrate.

Claim 17. (Original) The optocoupler package of claim 16 wherein the substrate includes a leadframe including etched portions.

Claim 18. (Original) The optocoupler package of claim 16 wherein the substrate comprises a leadframe that includes copper and a molding compound.

Claim 19. (Original) The optocoupler package of claim 16 further comprising a chip including a MOSFET on the substrate.

Claim 20. (Original) The optocoupler package of claim 1 further comprising a chip including a MOSFET on the substrate.

Claim 21. (New) An optocoupler package comprising:

- (a) a substrate comprising a leadframe including etched regions and non-etched regions and a molding compound, wherein the molding compound covers the etched regions and exposes the non-etched regions, an exterior surface of the molding compound and the non-etched regions forming a planar surface;
- (b) an optical emitter mounted on at least some of the non-etched regions;

Appl. No. 10/817,195
Amdt. dated January 22, 2006
Reply to Office Action of October 24, 2006

PATENT

- (c) an optical receiver mounted on at least some of the non-etched regions, wherein the optical emitter and the optical receiver are electrically coupled to the leadframe; and
- (d) an optically transmissive medium disposed between the optical emitter and optical receiver and being on the substrate.

Claim 22. (New) The optocoupler package of claim 21 wherein the leadframe structure includes plating layers and comprises copper.

Claim 23. (New) The optocoupler package of claim 21 wherein at least two optical emitters are on at least some of the non-etched regions and at least two optical receivers are mounted on at least some of the non-etched regions.

Claim 24. (New) The optocoupler package of claim 21 further comprising a plurality of solder structures mounted on the periphery of the substrate and encircling the optical receiver and the optical emitter.

Claim 25. (New) An electrical assembly comprising:
the optocoupler package of claim 24; and
a printed circuit board, wherein the optical emitter and the optical receiver are disposed between the substrate and the printed circuit board.